

## **Working Capital Fund Benefit/Cost Analysis Update, (1997-2008)**

### Introduction

The purpose of this paper is to update the financial benefit/cost analysis for the Working Capital Fund to include estimated Fund financial results for FY 2008. This paper relies on the basic methodology set forth in our prior analyses, undertaken annually since 2001.<sup>1</sup> Specifically, it compares the Department's average annual spending levels for the services included in the Fund for the four years **before** the creation of the Fund to the twelve years **since** creation of the Fund. Spending levels in the pre-Fund era are calculated from budget obligations, whereas spending levels since creation of the Fund are calculated as billings to program office customers. The data referred to in the text are included in Appendix A.

### Summary of Results

- During the 12 years of the Fund, the average annual costs of continuing businesses decreased by \$ 6.1 million or over 7 % in current (as spent) dollars, so direct DOE budget savings have been \$73.2 million.<sup>2</sup> When inflation is taken into consideration, the savings from the Fund are estimated to be nearly \$20 million/year or over 20%<sup>3</sup>. This represents approximately \$239 million over the life of the Fund in constant FY 2000 dollars.
- While there are many qualifiers on this analysis, the evidence remains strong that the Department has achieved substantial net economic benefits from the market-like approach of the Fund to the provision of common administration services to Headquarters.

### WCF Trend Overview

This analysis includes sixteen years of expenditures, covering FY 1993 through FY 2008. The Fund was created in the FY 1997 budget, so the first four fiscal years (FY 1993-96) in the data represent the Department's spending patterns before the Fund was created, whereas the last twelve years of the data series cover the period of Fund operation (FY 1997-2008).

As shown in Table A-1, before adjustments for business composition or for inflation, the spending levels for all the activities that have been included in the Fund have fluctuated from a low of \$79.8 million in FY 1998 to a high of \$115.7 million in FY 2008.<sup>4</sup>

The variation in spending levels over time has been relatively low:

- The sixteen-year average is \$91.2 million in current (as-spent) dollars;
- The pre-WCF average is \$85.9 million;
- The WCF 12-year average is \$92.9 million; and
- Nine of the sixteen years have been between \$80 and \$90 million.

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<sup>1</sup> Appendix B provides a discussion of key methodological issues.

<sup>2</sup> See Table 1

<sup>3</sup> See Table 2

<sup>4</sup> Throughout this paper, amounts have been calculated in whole dollars and then rounded, so some tables may not add due to this rounding convention.

Notwithstanding this apparent stability, the business activities in the Fund have changed over time as discussed in the following section.

### Continuing Business Analysis

The composition of the Working Capital Fund has changed over time, with the addition and removal of business activities. The following summarizes these dynamics:

- The DCAA Audits business line was in the Fund for one year only (FY 1997); it was removed in the FY 1998 budget process;
- In FY 1998, the Payroll business was added, and the CHRIS business was added for FY 2002;
- The Executive Information System business line was added to the Fund for FY 1999 and FY 2000, but was removed from the Fund for FY 2001;
- Starting in FY 2000, some customers financed improvements of their office space through supplemental payments into the Fund, and for FY 2001, the Board embarked on a policy of making approximately \$3 million/year in upgrades in Headquarters facilities (\$4 million/year beginning in FY 2008);
- Contract Closeout had been funded in diverse ways before creation of the Fund, so a full 14-year trend does not exist;
- On-Line Learning was added to the Fund in FY 2002 after a pilot period outside the Fund, but this service did not exist in the FY 1993-96 period;
- In FY 2001, the DOENet segment was added to the Network business line, nearly doubling the size of that line;
- For FY 2003, the Board approved changes to the Mail business pricing policy to accommodate, among other factors, additional security procedures put in place after the anthrax problems that arose in 2001;
- For FY 2004, the Board approved a series of pricing policy changes affecting the businesses, including the addition of the Project Management Career Development business and the Digital Imaging business segment of the Copying business line.
- Also for FY 2004, the Board expanded the list of items for inclusion in the Telephone business line so that pagers, electronic devices, and dedicated lines would be within, rather than outside, the WCF billing system. It also authorized the Fund to assume billing responsibility for fee-for-service professional skills training and allowed for the payment of the administrative costs of flexible savings account programs through the Payroll business line.
- For FY 2005, the Board authorized the addition of the Purchase Card Surveillance business segment.
- For FY 2006, the Board added the STARS business line and authorized expansion of the Copying business line to include electronic newsclipping services.
- For FY 2007, the Financial Review (OMB Circular A-123) function was added to the Fund.<sup>5</sup>
- For FY 2008, the WCF Board added shuttle bus services (\$0.4 million) and Flexible Savings Accounts (\$0.4million) to the Fund.

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<sup>5</sup> The Department's FY 2007 budget for the WCF assumed that External Independent Reviews would be added as a Fund business in FY 2007 and future years, but during the FY 2007 Continuing Resolution period, the Office of Management proposed the removal of External Independent Reviews from the Fund in FY 2009. The Board concurred, so the phase-in of the business into the Fund in FY 2007 was not implemented.

Looking ahead, the FY 2009 budget proposes numerous changes to both the business structure of the Fund and to the cost structures of certain individual businesses. One of the largest single changes will be to move the DCAA Audit function into the Fund, reversing the FY 1998 action cited above to take the DCAA Audit function out of the Fund. Other changes include the addition of Oak Ridge Financial Service Center (ORFSC) contract costs to the STARS business, adding the operation of the new procurement system (STRIPES) to the Fund, expanding the cost structure of the Building Occupancy Business Line to encompass contractual costs for work previously performed by Federal employees, and using the Fund to manage customer payments for couriers services, the shuttle bus, and a variety of other activities.

Altogether, nearly \$26 million of the Fund's customer billings in FY 2008 were associated with business lines or segments that did not exist and/or were not part of the Fund business structure when it was created. The structural changes summarized above in conjunction with Board action on the FY 2009 budget will add a further \$31 million is estimated FY 2009 billings to the Fund. These changes in business structure are the primary challenge to use of this historical comparison approach to evaluating the impacts of the Fund operation on cost efficiency.

To account for these changes, we are using the concept of "continuing businesses." This concept is used in private sector financial reports to distinguish between trends due to acquisition or divestiture of businesses and trends that reflect changes for those activities that were managed throughout the period of analysis – the "continuing businesses". These additions are itemized on Table A-2 in the appendix.

A further methodological issue is that the cost structure of the Fund businesses during the FY 1997-2006 does not always match the cost classifications during the years prior to the Fund:

- Prior to FY 1997, the costs of the Information Management business lines were classified as either Telephone or Desktop, and Network costs were distributed between these lines, but starting in FY 2007, the three Information Management businesses (Telephones, Desktop and Network) were reconsolidated into two business lines (Telephones and Network);
- The costs of copying paper were borne by what became the Supplies business line, rather than the Copying business line; and
- Printed stationery is now sold through the Printing business line, rather than in the privately-operated PaperClips supply store.

To permit an accurate comparison of costs before and after the Fund, therefore, we needed to remove certain activities from the analysis, and we also needed to group the continuing businesses into larger categories to match pre-Fund cost records. Table A-2 starts with the gross business totals from Table A-1 and then identifies new business segments and discontinued activities to be removed from the trend analysis. The remaining data are then grouped into three business areas, displayed in Table A-3.

When the Fund was created for FY 1997, all business lines reported administratively to the Assistant Secretary for Human Resources and Administration (HR&A). The information management functions were removed from HR&A with the creation of the CIO organization, businesses managed by the Chief Financial Officer were added to the Fund, and then, for FY

2006, the Department further subdivided support functions to separate the Chief Human Capital Officer (CHCO) organization, which provides training services, and the Office of Management (MA), and the Chief Financial Officer (CFO). Since the business lines administered by the CFO and the CHCO were all added to the Fund after FY 1997, the three business segments on Table A-3 are administered by the CIO (IT Services) and MA (Building Occupancy and Administrative Services). All business lines now being managed through the Chief Financial Officer organization in FY 2007 were added to the Fund after FY 1997 and are thus not included as “continuing businesses” in this study.

Figure I below shows how the gross financial level described in Table A-1 converts to a “continuing business” trend line on Table A-2, in current “as-spent” dollars. Most notable is the removal of the one-year business line for audits in FY 1998. Also shown is the gradual addition of business activities to the Fund, a trend that will grow in FY 2008 and FY 2009, as discussed above. Some of the added activities did not even exist in the period before the Fund was created, while others existed in some form but were being paid for by customer organizations outside the Fund. Still others were financed centrally but were not organized as separate cost centers.

**Figure I**

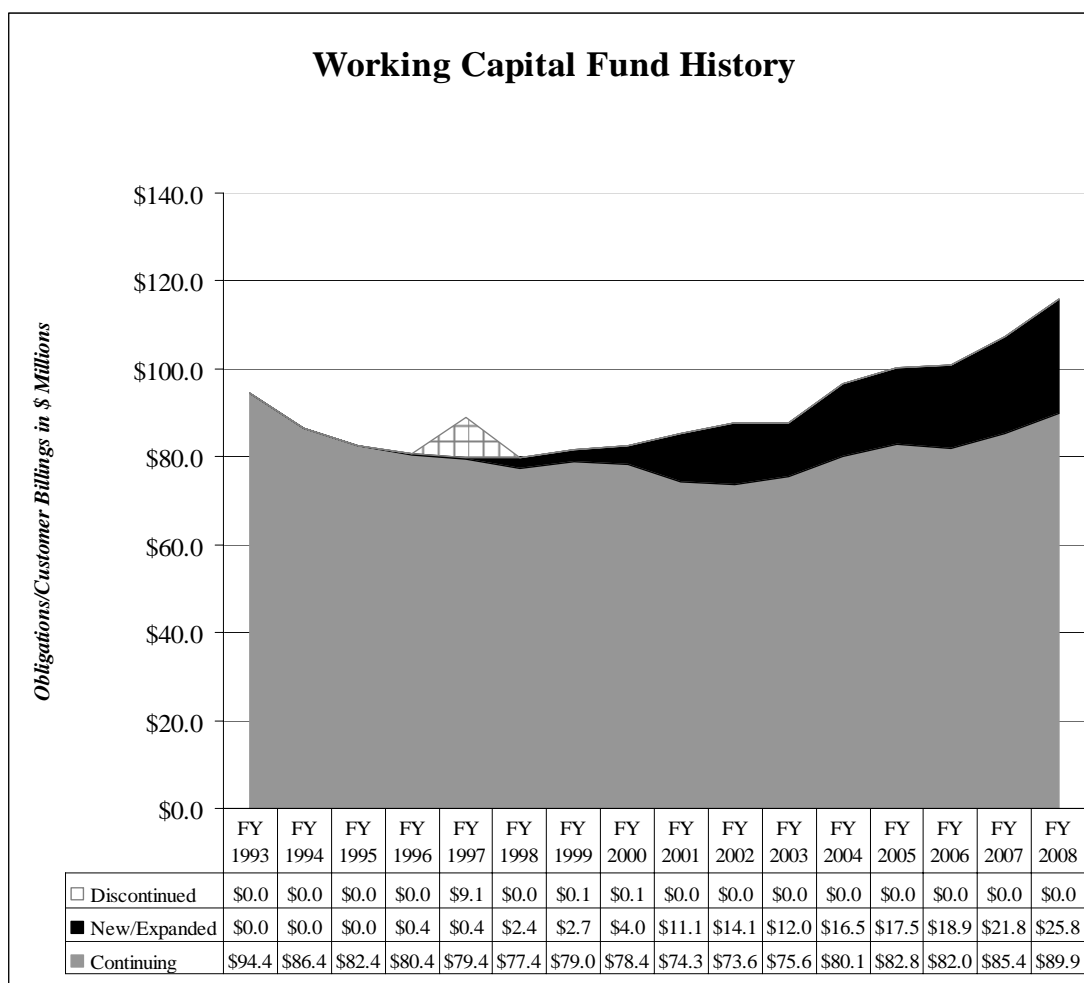
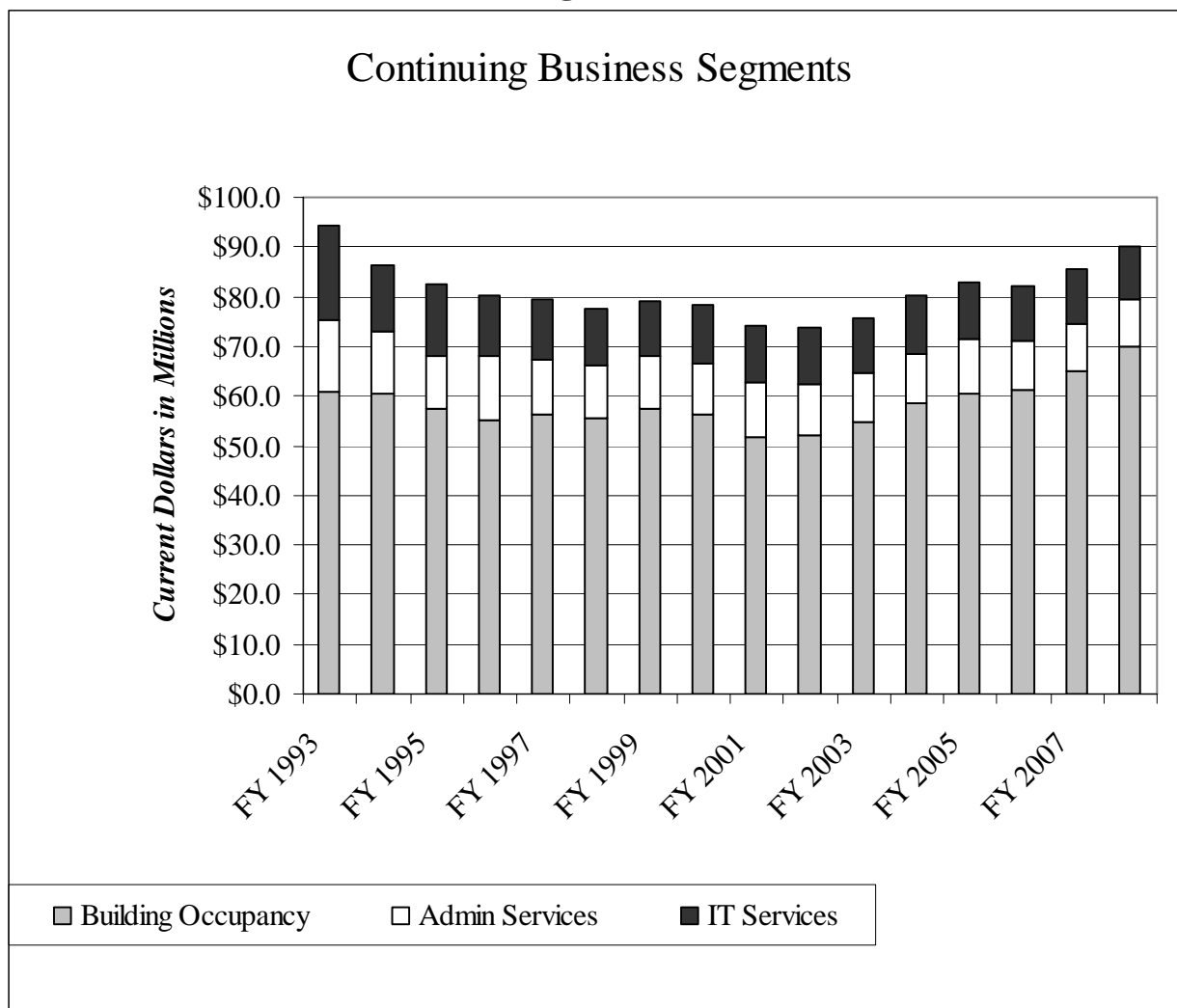


Figure II depicts the information in Table A-3 – the organization of continuing business line information into three business segments. Figure II illustrates that much of the absolute change in total annual costs is attributable to changes in the Building Occupancy business line. Building Occupancy costs reflect the combined effect of DOE management decisions on Headquarters space requirements and GSA and OMB decisions regarding agency rental charges for the Federal Building Fund. As discussed further below, the relative change, measured in percentage terms, is higher for the two smaller business segments.

**Figure II<sup>6</sup>**



### Current-Dollar Analysis

As Table 1 below demonstrates, before accounting for inflation effects, the average annual cost of continuing businesses in the Fund has been \$6.1 million or nearly 7% lower during the ten actual years of Fund operation than in the four years (FY 1993-96) before the Fund was created. Specifically, the average annual cost in FY 1993-96 for all continuing businesses was \$85.9

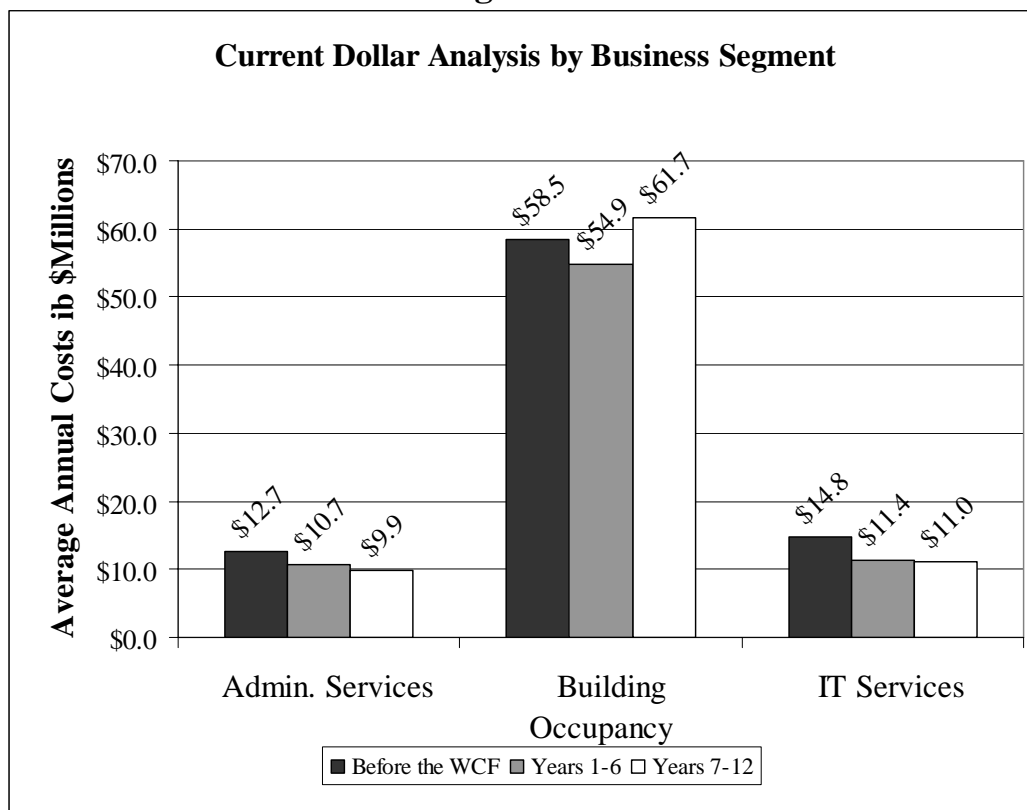
<sup>6</sup> Information in Figure II is in current (as-spent) dollars.

million, whereas the twelve-year average for Fund billings to customers has been \$79.8 million. Over a twelve-year period, savings would total \$ 73.2 million. While there has been cost reductions in all three business areas, the highest absolute and percentage reduction has been in the Information Technology (IT) business lines.

Compared to prior analyses, the margin of savings, on an annual average basis, has been declining due to the effects of inflation, as discussed further below. Indeed, the actual FY 2008 earnings from “continuing businesses” (\$89.9 million) exceeds the four-year pre-Fund average of \$85.9 million.

Table 1: 12-Year Analysis: Annual Cost Patterns by Business Area (\$ Current in Millions) <sup>7</sup>				
	Average Annual Costs, FY 1993-96	Average Annual Costs, FY 97-2008	Reduction (\$Millions)	Percent Reduction
Admin. Services	\$12.7	\$10.3	\$2.4	18.9%
Building Occupancy	\$58.5	\$58.3	\$0.2	0.3%
IT Services	\$14.8	\$11.2	\$3.6	24.3%
Total	\$85.9	\$79.8	\$6.1	7.1%

**Figure III<sup>8</sup>**



<sup>7</sup> In all cases, the calculation of differences and percentages is derived directly from the source data in spreadsheets and then rounded, so some totals include a ‘rounding error.’

<sup>8</sup> Reflects Current (as-spent) dollars

Figure III provides a graphic depiction of the information in Table 1, with a further subdivision of the twelve years of Fund operation into two periods, reflecting 1997-2001 and 2002-2008. It shows that while the Administrative Services and IT Services continuing business segments have stable cost patterns and continue to yield increasing net savings, the large Building Occupancy business line has had cost growth during the most recent period. Two factors have contributed to this increase: (a) rental rate increases by GSA, the agency that acquires Headquarters office space through the Public Building Fund, and (b) the increase in NNSA space at L'Enfant Plaza.

It is clear from Figure III that if Building Occupancy expense trends continue, or increase further in response to GSA rent determinations, there will likely be a further reduction in the current dollar annual savings shown for the Fund in Table 1 above. Accordingly, future current dollar analyses are likely to reveal a narrowing in the advantages of the post-Fund period over the pre-WCF period. In fact, using this nominal dollar analysis, the net cost reduction of \$73.2 million over the pre-Fund period (\$6.1 million annual savings for 12 years) is trending toward lower cost savings from a high of \$7.7 million annual cost savings in FY 2006 (\$7.0 million in FY 2007).

### Constant Dollar Analysis

The analysis above is in “current dollars”, unadjusted for inflation effects. In this section, these data are converted to “constant” dollars, removing the effects of inflation. Table A-4 uses the OMB deflator for Federal Non-Defense Expenditures<sup>9</sup> to convert the continuing business data from Table A-2 to constant FY 2000 dollars. Table 3 below summarizes the results of this analysis for the 12-year period under review, and Figure IV compares the trends for continuing business in current (“as spent”) dollars (solid line) to constant FY 2000 dollars (dashed line). In the discussion that follows, unless otherwise noted, we are referring to FY 2000 for the base year of the constant dollar analysis.<sup>10</sup>

Table 3: 12-Year Analysis: Annual Cost Patterns by Business Area (Constant \$ FY 2000 in Millions)				
	Average Annual Costs, FY 1993-96	Average Annual Costs, FY 97-2008	Reduction (\$Millions)	Percent Reduction
Admin. Services	\$14.0	\$9.8	\$4.2	30.0%
Building Occupancy	\$64.6	\$54.7	\$9.9	15.4%
IT Services	\$16.4	\$10.6	\$5.8	35.4%
Total	\$95.0	\$75.1	\$19.9	20.9%

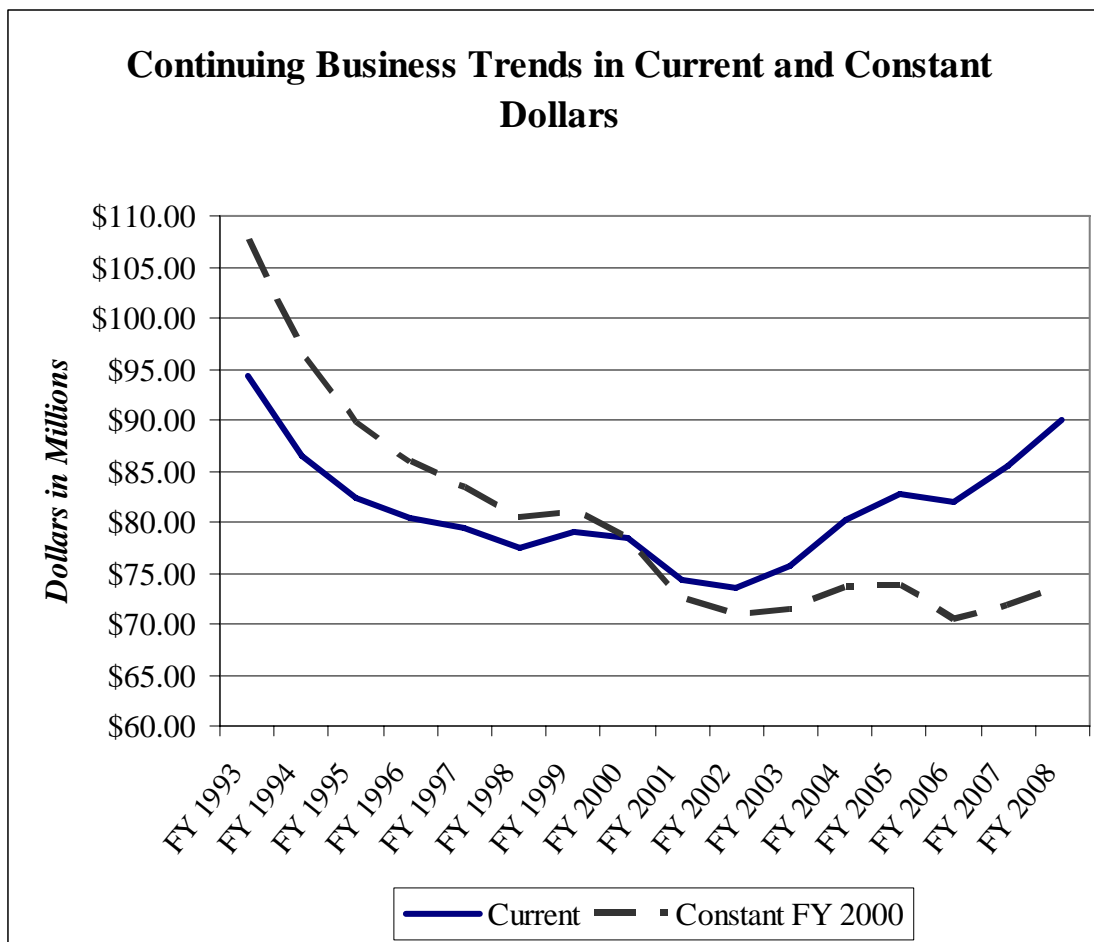
Table 3 above compares the average annual costs by business area before the Fund was created to the average annual costs during the twelve-year period of Fund operation. The table shows that annual costs since the Fund was created are \$19.9 million lower than average annual costs in the pre-Fund period, a percentage reduction of 20.9%. Over the twelve years of the Fund, the

<sup>9</sup> Taken from Table 10.1 of the “Historical Tables” section of the *Budget of the United States Government, FY 2009*.

<sup>10</sup> Prior versions of this paper used FY 1996 as the base year for the constant dollar comparisons. In the FY 2005 budget documents, OMB shifted from use of 1996 to 2000 for the base year for estimating inflation effects, this 2007 edition and future versions of this analysis will also rely on 2000 dollars. The methodology section from the 1997-2004 analysis provided a discussion of the impacts of the shift from FY 1996 to FY 2000 in this paper.

total savings would be \$239 million in FY 2000 dollars, up from the \$218 million in the 2007 study that covered 11 years.

**Figure IV**



Because these data are adjusted to FY 2000 dollars, the annual costs shown for the pre-Fund period are higher than the current dollar analysis in Table 1, whereas the annual costs for the period since FY 2000 are lower, with the cross-over point, by definition, being FY 2000. Figure IV demonstrates the consistent decline in continuing business spending during the period of analysis – until FY 2004. FY 2004 reflects increases in Building Occupancy costs that exceed projected inflation rates (see previous comment on the effects of increased rental space for NNSA on L’Enfant Plaza). FY 2005 reflects no net growth in customer billings from FY 2004 and FY 2006 reflects a decline in inflation-adjusted billings. In FY 2007, driven by an increase in GSA rental charges, there was a real dollar increase again. In fact, in FY 2008, the real 2000 dollar costs for Building Occupancy were \$500 thousand greater than the four-year pre-Fund average, suggesting that further real dollar savings will be limited by GSA rent decisions. However, it is heartening to note that in the continuing businesses of both Administrative Service and IT Services, the annual costs in inflation-adjusted dollars are continuing to decline.



October 28, 2008

## Discussion

Both the current –dollar and constant-dollar analyses strongly suggest that there have been significant net economic benefits to the creation and twelve-year operation of the Working Capital Fund. The “current dollar” net benefits appear to have stabilized at an estimated savings of \$73 - 77 million, while the real-dollar benefits are increasing and now exceed \$239 million (2000 dollars). The methodological discussion in Appendix B is intended to recognize that there are and will be a number of different ways to approach this subject. Specifically, there are factors such as customer satisfaction, customer choice, net earnings, business-type financial accounting, and the current exclusion of Federal employee salaries and expenses that need to be considered, even if they are not easily incorporated into a single bottom-line analysis. Notwithstanding the inevitable analytic limitations, this analysis shows a clear, systematic, and substantial pattern of cost reduction since the creation of the Fund.

## Appendix A

**Table A-1: Working Capital Fund Financial Evaluation Data**

	(Obligations in \$ Millions)					(Earnings in \$ Millions)										
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Supplies/PaperClips	\$3.7	\$2.8	\$3.1	\$3.3	\$2.6	\$2.8	\$3.0	\$2.8	\$2.9	\$3.3	\$2.4	\$2.8	\$3.0	\$3.0	\$3.0	\$3.1
Mail	\$3.4	\$3.4	\$2.2	\$4.6	\$2.2	\$1.9	\$1.7	\$1.6	\$1.7	\$2.0	\$2.6	\$2.4	\$2.0	\$2.1	\$2.0	\$2.0
Shuttle Bus																\$0.4
Copying	\$1.5	\$1.1	\$1.3	\$1.0	\$2.2	\$2.7	\$2.5	\$2.7	\$2.4	\$2.0	\$2.4	\$2.1	\$2.3	\$2.3	\$1.9	\$2.2
Digital	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.1	\$0.1	\$0.1	\$0.1
Newsclips	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.2	\$0.2
Printing/Graphics	\$5.7	\$5.4	\$4.3	\$3.8	\$3.9	\$3.3	\$3.5	\$3.5	\$4.1	\$3.2	\$2.8	\$3.1	\$3.9	\$2.7	\$2.5	\$2.2
Building Occupancy	\$60.9	\$60.4	\$57.3	\$55.2	\$56.4	\$55.5	\$57.4	\$56.1	\$51.8	\$52.0	\$54.7	\$58.5	\$60.6	\$61.1	\$65.1	\$70.0
Improvements					\$0.0	\$0.0	\$0.0	\$1.3	\$4.6	\$4.6	\$4.2	\$4.1	\$5.7	\$3.6	\$4.3	\$4.4
Telephones	\$9.2	\$6.4	\$6.1	\$7.1	\$6.8	\$6.6	\$6.3	\$7.0	\$6.8	\$6.8	\$6.5	\$6.7	\$6.5	\$6.4	\$6.4	\$6.7
Dedicated Phone Lines																\$0.4
Cell Phones, Etc.					\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.5	\$2.0	\$2.5	\$1.7	\$2.2
Desktop	\$10.0	\$6.9	\$8.1	\$5.4	\$2.3	\$1.5	\$1.6	\$1.4	\$1.2	\$1.2	\$1.1	\$0.9	\$0.9	\$0.8	\$0.0	\$0.0
Network					\$3.1	\$3.1	\$3.1	\$3.2	\$3.4	\$3.5	\$3.5	\$4.1	\$4.1	\$4.0	\$4.8	\$3.9
DOENet					\$0.0	\$0.0	\$0.0	\$0.0	\$2.7	\$2.7	\$2.7	\$1.9	\$1.9	\$1.9	\$1.8	\$1.9
Contract Closeout				\$0.4	\$0.4	\$0.4	\$0.6	\$0.5	\$0.7	\$0.8	\$0.8	\$1.0	\$0.8	\$0.7	\$0.5	\$0.5
Purch Card Surveillance					\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	\$0.3	\$0.3	\$0.2
Payroll					\$0.0	\$1.9	\$2.1	\$2.2	\$3.1	\$3.1	\$1.4	\$2.1	\$2.1	\$2.2	\$2.1	\$2.1
FSA																\$0.4
CHRIS					\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.2	\$2.2	\$2.2	\$2.2	\$2.2	\$2.2	\$2.2
EIS					\$0.0	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Audits					\$9.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
On-Line Learning					\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	\$0.3	\$0.3	\$0.2	\$0.1	\$0.1	\$0.0
Other Training					\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	\$0.5	\$0.1	\$0.2	\$0.4
PMCDP					\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.5	\$1.4	\$1.1	\$4.0	\$5.0
STARS					\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$3.5	\$1.0	\$1.0
Internal Review															\$2.9	\$4.0
Total	<b>\$94.4</b>	<b>\$86.4</b>	<b>\$82.4</b>	<b>\$80.8</b>	<b>\$89.0</b>	<b>\$79.8</b>	<b>\$81.7</b>	<b>\$82.5</b>	<b>\$85.4</b>	<b>\$87.7</b>	<b>\$87.6</b>	<b>\$96.7</b>	<b>\$100.3</b>	<b>\$100.9</b>	<b>\$107.2</b>	<b>\$115.7</b>

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<b>Table A-2: Working Capital Fund Continuing Business Data</b>																
	<b>(Obligations in \$ Millions)</b>					<b>(Earnings in \$ Millions)</b>										
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008
<b>Gross Total (from A-1)</b>	\$94.4	\$86.4	\$82.4	\$80.8	\$89.0	\$79.8	\$81.7	\$82.5	\$85.4	\$87.7	\$87.6	\$96.7	\$100.3	\$100.9	\$107.2	\$115.7
<b>Discontinued Businesses</b>																
EIS	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Audits	\$0.0	\$0.0	\$0.0	\$0.0	\$9.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total	\$0.0	\$0.0	\$0.0	\$0.0	\$9.1	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>New/Expanded Businesses</b>																
Mail: 9/11 Supplement	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2
Shuttle Bus																\$0.4
Digital Imaging	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.1	\$0.1	\$0.1	\$0.1
Newsclips	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.2	\$0.2
Building Improvements	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.3	\$4.6	\$4.6	\$4.2	\$4.1	\$5.7	\$3.6	\$4.3	\$4.4
Desktop: Virus Supplement	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.0
Dedicated Phone lines																\$0.4
Cell Phones, etc.	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.5	\$2.0	\$2.5	\$1.7	\$2.2
DOENet	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.7	\$2.7	\$2.7	\$1.9	\$1.9	\$1.9	\$1.8	\$1.9
Contract Closeout	\$0.0	\$0.0	\$0.0	\$0.4	\$0.4	\$0.4	\$0.6	\$0.5	\$0.7	\$0.8	\$0.8	\$1.0	\$0.8	\$0.7	\$0.5	\$0.5
Purch. Card Surveillance	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	\$0.3	\$0.3	\$0.2
Payroll	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.9	\$2.1	\$2.2	\$3.1	\$3.1	\$1.4	\$2.1	\$2.1	\$2.2	\$2.1	\$2.1
FSA																\$0.4
CHRIS	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.2	\$2.2	\$2.2	\$2.2	\$2.2	\$2.2	\$2.2
On-Line Learning	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	\$0.3	\$0.3	\$0.2	\$0.1	\$0.1	\$0.0
Other Training	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	\$0.5	\$0.1	\$0.2	\$0.4
PMCDP	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.5	\$1.4	\$1.1	\$4.0	\$5.0
STARS	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$3.5	\$1.0	\$1.0
Financial Review	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.9	\$4.0
Total	\$0.0	\$0.0	\$0.0	\$0.4	\$0.4	\$2.4	\$2.7	\$4.0	\$11.1	\$14.1	\$12.0	\$16.5	\$17.5	\$18.9	\$21.8	\$25.8
<b>Continuing Businesses</b>																
<b>Continuing Businesses</b>	<b>\$94.4</b>	<b>\$86.4</b>	<b>\$82.4</b>	<b>\$80.4</b>	<b>\$79.4</b>	<b>\$77.4</b>	<b>\$79.0</b>	<b>\$78.4</b>	<b>\$74.3</b>	<b>\$73.6</b>	<b>\$75.6</b>	<b>\$80.1</b>	<b>\$82.8</b>	<b>\$82.0</b>	<b>\$85.4</b>	<b>\$89.9</b>

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<b>Table A-3: Working Capital Fund Continuing Business Segments</b>																
	<b>(Obligations in \$ Millions)</b>				<b>(Earnings in \$ Millions)</b>											
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY2008
<b>Continuing Businesses(from A-2)</b>	<b>\$94.4</b>	<b>\$86.4</b>	<b>\$82.4</b>	<b>\$80.4</b>	<b>\$79.4</b>	<b>\$77.4</b>	<b>\$79.0</b>	<b>\$78.4</b>	<b>\$74.3</b>	<b>\$73.6</b>	<b>\$75.6</b>	<b>\$80.1</b>	<b>\$82.8</b>	<b>\$82.0</b>	<b>\$85.4</b>	<b>\$89.9</b>
Segments;																
Admin. Services	\$14.3	\$12.7	\$10.9	\$12.7	\$11.0	\$10.7	\$10.6	\$10.6	\$11.0	\$10.3	\$9.9	\$10.1	\$10.9	\$9.9	\$9.3	\$9.5
Building Occupancy	\$60.9	\$60.4	\$57.3	\$55.2	\$56.4	\$55.5	\$57.4	\$56.1	\$51.8	\$52.0	\$54.7	\$58.5	\$60.6	\$61.1	\$65.1	\$70.0
IT Services	\$19.2	\$13.3	\$14.2	\$12.5	\$12.1	\$11.2	\$11.0	\$11.7	\$11.4	\$11.2	\$11.0	\$11.5	\$11.3	\$11.0	\$11.0	\$10.5
Discontinued	\$0.0	\$0.0	\$0.0	\$0.0	\$9.1	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
New/Expanded	\$0.0	\$0.0	\$0.0	\$0.4	\$0.4	\$2.4	\$2.7	\$4.0	\$11.1	\$14.1	\$12.0	\$16.5	\$17.5	\$18.9	\$21.8	\$25.8

<b>Table A-4: Working Capital Fund Continuing Business Segments (Constant 2000 Dollars)</b>																
	<b>(Obligations in \$ Millions)</b>				<b>(Earnings in \$ Millions)</b>											
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
OMB Deflator for Non-Defense Expenditures	0.8770	0.8946	0.9171	0.9356	0.9534	0.9623	0.9759	1.0000	1.0229	1.0393	1.0607	1.0885	1.1236	1.1660	1.1903	1.2221
Admin. Services	\$16.3	\$14.2	\$11.9	\$13.6	\$11.5	\$11.1	\$10.9	\$10.6	\$10.8	\$10.0	\$9.4	\$9.3	\$9.7	\$8.5	\$7.8	\$7.7
Building Occupancy	\$69.4	\$67.5	\$62.5	\$59.0	\$59.1	\$57.7	\$58.8	\$56.1	\$50.7	\$50.1	\$51.6	\$53.8	\$53.9	\$52.4	\$54.7	\$57.3
IT Services	\$21.9	\$14.9	\$15.5	\$13.4	\$12.7	\$11.6	\$11.2	\$11.7	\$11.2	\$10.8	\$10.3	\$10.6	\$10.0	\$9.4	\$9.2	\$8.6
<b>Total, Continuing Businesses</b>	<b>\$107.6</b>	<b>\$96.6</b>	<b>\$89.8</b>	<b>\$85.9</b>	<b>\$83.3</b>	<b>\$80.4</b>	<b>\$80.9</b>	<b>\$78.4</b>	<b>\$72.6</b>	<b>\$70.8</b>	<b>\$71.3</b>	<b>\$73.6</b>	<b>\$73.7</b>	<b>\$70.3</b>	<b>\$71.8</b>	<b>\$73.6</b>

## Appendix B

### Methodological Notes on Working Capital Fund Evaluation

There are a number of factors that have not been taken explicitly into consideration in the Working Capital Fund benefit/cost analysis. This section discusses these factors in terms of whether, had they been included, they would have added to or detracted from conclusions about the net efficiency of the Fund.

#### Background

The Department's Working Capital Fund is an intra-governmental revolving fund – one of approximately three dozen such funds in 20 different Federal agencies. Over 10% of the Federal civilian workforce is employed in activities financed by such funds, and their combined revenues of over \$100 billion would place them in the top 10 largest companies in the Fortune 500.

These funds are not easy to evaluate. The PART tool is not especially well-suited to the operation of revolving funds, since the activities financed by the funds typically produce outputs that become inputs to other Federal activities, rather than final goods or services for use by taxpayers. Also, some of the products and services available through intra-governmental service funds are also available outside such funds, so the net value-added of the fund mechanism *per se* is not simple to quantify.

The objectives of the DOE Working Capital Fund can be summarized as:

- Improve the *efficiency* of administrative services by providing managers with the opportunity and responsibility to make choice on the amount, priority, and, where possible, the sources of administrative services used by their programs;
- Ensure that program mission budgets include a *fair allocation* of the costs of common administrative services; and
- Expand the *flexibility* of the Department's budget structure to permit service providers to respond to customer needs.

Direct observation of efficiency, fairness, and flexibility is difficult, especially when one considers the wide variety of services provided through the Fund. The orientation of this financial benefit-cost analysis is one aspect of the Fund objectives – efficiency – and is further limited by a focus on costs. The tacit assumption is that, for continuing businesses, one can hold output to have been maintained such that a comparison of inputs will alone be conclusive. The further assumption is made that costs can be best measured from the perspective of customer billings, rather than business expenses.

There are a number of reasons why the assumptions made in this analysis could be challenged, but there are no foolproof ways to introduce alternative assumptions without creating risks to the rigor of the financial analysis. In the following sections, we discuss some alternative factors that could be included in the evaluation, organized in terms of whether one could reasonably conclude that these factors would tend to add to or detract from the bottom line judgment of the financial analysis – that the Fund has reduced the Department's costs for administrative services.

Items potentially adding to net benefits

1. Net Earnings: In the analysis above, the cost metric for the period during which the Fund has operated was the billings to customers, rather than business expenses. Billings constitute a legitimate measure of Fund activity and are used in WCF budget submissions because such billings represent the costs that are allocated to departmental programs and organizations to which Congress directly appropriates funding. However, if billings overstate or understate the actual consumption of goods and services through Fund businesses, it is plausible that the efficiency analysis would be distorted.

The Fund is projecting net earnings (billings minus business expenses) of approximately \$15 million over the first twelve years of operation<sup>11</sup>. Accordingly, if business expenses were used instead of customer-experienced expenses, the average annual costs, in nominal dollars, would be further reduced, widening the margin of net benefit since creation of the Fund beyond the current dollar estimate of \$7.0 million/year reported on Table 1. It should be noted, however, that much of the net earnings of the Fund has been in Building Occupancy, where earnings from improvements have been booked in advance of expenditures. Conversely, the largest apparent business loss (negative net earnings) has been in Telephones, reflecting primarily a one-time write-off of an original equipment asset which was likely over-valued at the time of Fund creation. Another source of net earnings has been the Payroll business line, which initially accumulated reserves in anticipation of the one-time costs of system conversion.

Building Occupancy Improvements, Payroll, PMCDP, and Financial Review have been excluded from the Continuing Business category, so it would not be appropriate to include their net earnings as an added economic benefit. Telephones was included as a continuing business, but the conversion of the book value of the physical asset to a financial cash asset had little, if any, effect on the operation of the business, nor on its financial viability. Therefore, while net earnings for continuing businesses might have been an added economic benefit, we have excluded net earnings from the analysis to avoid inclusion of inappropriate or misleading items.

2. Product Substitution and Choice: The Fund gives customers the opportunity to make decisions on the mix, level, and quality of services. Indeed, Flexibility is one of the three Fund goals. This has allowed customers to adapt to technological changes and to substitute, for example, LAN connections for telephone connections, cell phones for land lines, digital imaging for paper, and the like. It has also allowed customers to substitute for activities that are financed outside the Fund. For example, the flexibility to acquire supplies, copying, or printing services may have allowed customers to make better use of current Federal staff and reduced use of contractors to prepare and

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<sup>11</sup> The data used in this October 2007 discussion derive from FY 2007 accounting information prior to the final formal issuance of the Department's accounting statements. These data are thought to be reliable in all material respects, but there may be slight variances between these results and those that will be reported by the Fund Manager in the WCF annual report.

disseminate information. Or, the availability of enhanced telephone or network services may have reduced the need for travel.

While it cannot be proven empirically that better information and broader flexibility for managers will result in more cost-effective operations, expanding choice is, in directional terms, an advantage of the Fund compared to the pre-Fund years, when services were rationed by non-market means. That is, an \$89.9 million annual expenditure (FY 2008 billings for continuing businesses) that reflects customer priorities would be expected to have higher value for the accomplishment of the Department's missions than the same level of expenditure in centrally-rationed services.

3. Product Development and Innovation: There are sound methodological reasons for including only "continuing businesses" in the financial evaluation, but it is clear from, for example, Figure I, that there are new and growing businesses that did not exist when the Fund was created. On-Line Learning, cellular phone, the DOE-wide Network (DOEnet), purchase card surveillance through data-mining, and digitization are all examples of products that were not in widespread use or did not even exist when the Fund was created. Also included within this set of new or expanding businesses are products that may have existed before the Fund but which were financed by customer organizations outside the Fund. Some new products, notably those of the Project Management Career Development Program, were required by the Congress to be included in the Fund; others were added by the Working Capital Fund Board or senior DOE management.

The question is whether the Fund benefits extend beyond the cost reductions in continuing businesses because the Fund financial management and governance structures enable the Department to start, expand, contract, and stop new activities as technologies are developed or program organization requirements change. This benefit of the Fund cannot be readily quantified, but it is reasonable to suppose that the benefit is positive. While this paper focuses on the "efficiency" goals of the Fund, there are also important "flexibility" features of the Fund that increase benefits.

#### Items Potentially Reducing Net Benefits

1. Fund administrative costs (direct): The Department spends approximately \$120,000 annually for contractual services related to the administration of the Fund. These costs include the development and maintenance of the monthly billing system plus professional assistance to business lines in preparation of five-year plans. The costs have been financed through unbilled contributions to the Fund from the Chief Financial Officer, hence they are not included in business earnings and would be additive to the Fund costs discussed above. It should be noted, however, that at least some of the administrative overhead of the Fund would have been incurred under continued direct appropriations for the Fund services. If the Fund had not been created, it is possible that the need for non-price "rationing" of centrally-funded services would have required more expensive management systems than those employed for the Fund.

In FY 2004, the Board authorized the inclusion of a number of activities in the Fund which had previously operated on a fee-for-service basis outside the Fund. Examples include cellular phones and training courses for which tuition payments were made by employing offices. These activities are not especially large, but one would expect there to be some economies-to-scale by managing the billing and recordkeeping functions in combination with those of the Fund.

During 2007, looking ahead to 2008 and 2009, the Board added still further components to the Fund, much of which, by dollars value, was already being paid for by customer organizations outside the Fund.

Nevertheless, the operation of the Fund is not “free” and needs to be considered in evaluating economic effects.

2. Headquarters Population Decreases: It needs to be acknowledged that at least some of the observed cost savings may have occurred without the creation of the Fund. Headquarters population, including contractors as well as Federal employees, decreased from a peak of about 7,700 in 1995 to approximately 6,600 in the first year of the Fund. Since then, population has fluctuated around 6,000 at the Headquarters complex<sup>12</sup>. However, building capacity continues to be rated at higher levels based on planned occupancy, and some Fund businesses finance infrastructure that is characterized by costs that are fixed in the near-term. Therefore, it is unlikely that, without the Fund, there would have been a proportional decrease in spending levels.

#### Items with Uncertain Impact

1. Business Accounting: The Fund uses business-type financial accounting that capitalizes certain costs but reflects depreciation on the current capital stock. Among other things, this has permitted the Fund to accumulate and invest cash to replace or upgrade capital equipment, and there have been significant upgrades in telephone switching equipment and copiers.<sup>13</sup> Likewise, the Fund uses business-type accounting for inventory transactions, and these business concepts have been built into the pricing policies that have become the basis for the earnings. In contrast, the obligation accounting for the FY 1993-96 base period does not reflect these business concepts. It is not known at this point whether, had business accounting been applied during the earlier periods, implied business expense levels would have been higher (due to depreciation and inventory drawdown) or lower (due to capital acquisition and inventory increases) than the obligation levels used for comparison purposes.
2. Business Subsidies: The parent organizations of Fund businesses (MA, CFO, HR and CIO) have subsidized the businesses and their customers by an estimated 13.9% of billings in FY 2008, a level comparable to prior years.<sup>14</sup> Approximately half of this subsidy is attributable to the fact that the Fund does not pay for an estimated \$6.3

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<sup>12</sup> The Building Occupancy business counted 5,920 persons as of September 16, 2006, including 3,996 Federal employees and 1,924 other occupants.

<sup>13</sup> The building upgrades have been factored into the analysis by deleting WCF earnings associated with tenant improvements.

<sup>14</sup> See *DOE Working Capital Fund Cost Structure Analysis, FY 2008* on the WCF Home Page.



million in salaries and benefits for Federal employees that are associated with the businesses, including the small central staff associated with billing and management oversight. During most of the period of Fund operation, there is evidence of a sustained decline of 5 per year in the number of Federal employees supporting the operations of continuing businesses, as defined in this study, with a sharper decline in the recent past as a result of the competitive sourcing actions taken in the Office of Management. However, it is unclear whether this trend would have extended back in time to the period before the Fund was created, since the parent organization's staffing decreased substantially in the mid-1990's, during the same period the Fund was being planned. It is also unclear whether and how this decline could be attributed to the creation of the Fund rather than to other factors.<sup>15</sup>

3. Fund/Non-Fund Substitution: It is possible that some customer organizations have taken advantage of the opportunity to acquire services from outside vendors rather than through the Fund organizations. Probably the strongest evidence is the drop-off in customer interest in using the Fund for computer hardware repair services, when new equipment purchases with warranties may have become more attractive.

One budgetary issue associated with the Fund has been the unwritten rule that all customer payments into the Fund should be derived from Program Direction dollars, rather than from Program dollars. In selected cases, it has been agreed that a new contractual activity, funded from Program dollars but requiring Washington, DC metropolitan area office space, could acquire that space through the Fund business line but outside the Fund financial mechanism. To the extent that this has occurred, then the savings estimates provided above may overstate the total net benefits of the Fund.

The availability of alternatives may also have stimulated Fund businesses to become more competitive in both pricing and quality, actually attracting customer funding. This latter phenomenon may be most pronounced for the business segments recently added to the Fund.

Overall, the evidence on the net effects of substitution between Fund businesses and non-Fund businesses<sup>16</sup> is very limited.

4. Inflation: The analysis is present in both "current" (as-spent) and "constant" dollars, because the general format of the analysis is a before-and-after comparison that now extends 16 years into the past. Due to general rates of price increases, the same goods and services that the Department was buying in the base period for \$85 million would be expected to cost even more today because of general inflation. Therefore, along with the decrease in current-dollar spending, as provided in Table 1 of the analysis, the Department has avoided what would have been an expected increase in budget requirements due to inflation.

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<sup>15</sup> Much of the decline in staffing has been in organizations that have been subject to ongoing competitive sourcing studies in the FY 2003-6 period.

<sup>16</sup> There have traditionally been a variety of cost-shared activities in the Department but outside the Fund, so customer resources not used in the Fund may be used through other DOE entities as well as directly with the private sector.

The methodological issue is how to calculate these savings. The approach we have taken is to re-compute the continuing-business cost patterns for the entire period under analysis, to characterize all spending levels in “constant” dollars, with the effects of general inflation thereby removed. The results of this analysis are presented in Figure IV and Table 3 of the main paper. To perform these calculations, we used the Office of Management and Budget (OMB) deflator for Federal Non-Defense Expenditures on Table 10.1 of the Historical Tables published by OMB.

There is the general methodological question of whether the correct deflator has been used. Among the deflators provided on OMB Table 10.1, the use of the deflator for Non-Defense Federal Outlays appears to be the most relevant. Indeed, over half of the Working Capital Fund expenditures involve payments to other Federal agencies, for space (GSA), printing (GPO), postage (USPS), Payroll (DFAS), and the like.

However, it needs to be acknowledged that the largest single payment is to GSA as a rental payment to the Federal Buildings Fund. To calculate such payments for government-owned buildings, GSA does a market analysis of comparable office space in the relevant geographical area. It is always possible, therefore, that the changes in market valuation by GSA for, say, the Forrestal Building, are not fully aligned with the OMB deflator series being used. This could result in either an over-statement or an under-statement of constant dollar costs both before and after creation of the Fund.

### Conclusion

The factors cited above are either offsetting in direction or uncertain in both direction and magnitude. Taken together, they illustrate some of the complexity in making bottom-line evaluations of Fund efficiency. The judgment of the Fund professional staff is as presented at the end of the main body of the paper: notwithstanding the inevitable analytic limitations, this analysis shows a clear, systematic, and substantial pattern of cost reduction since the creation of the Fund.

The evaluation methods for the Fund will need to change because the reference, in this current methodology, to period before the Fund now stretch back to comparison points of a half a generation ago. Some businesses use shorter time periods for “continuing business” analyses, such as retail organizations that measure sales for stores that have been open for a year or more. This, along with other methods, should be explored for possible future use.